

Claims

What is claimed is:

1. (Amended) ~~A stereoscope that is viewable in the upright and inverted positions consisting of:~~

- ~~(a) eyepieces with adjustable interpupillary distance,~~
- ~~(b) a two-way mirror separating a front chamber and a rear chamber so that each of said chambers has independent lighting,~~
- ~~(c) means of adjusting the relative brightness of left and right sides, and~~
- ~~(d) means of controlling the on and off rate of the lighting and the period of the lighting,~~

A device for testing binocular vision in humans comprising of:

- (a) an enclosure with right and left eyepieces and focusing lenses,
- (b) a front chamber and a rear chamber with each chamber having independent lighting,
- (c) a backdrop in said front chamber for mounting stereograms, fusible images, and non-fusible images that are viewable through the eyepieces,
- (d) a two-way mirror partitioning said front chamber from said rear chamber that separates said backdrop in said front chamber from a rival image pair consisting of a right rival image and a left rival image located in said rear chamber so that said rival image pair is illuminated primarily from light from said rear chamber and said rival image pair is visible through said eyepieces only when the illumination is brighter in said rear chamber than in said front chamber,

(e) means of providing sufficient energy to illuminate said front and rear chambers.

(f) means of independently switching on and off the lighting of said front chamber and said rear chamber.

whereby, ~~((rival))~~ images can be viewed by children and adults for measurement of binocularity, stereopsis, and binocular rivalry concurrently, or binocular rivalry can be measured separately from binocularity and stereopsis.

2. (Amended) A process of formatting visual stimuli consisting of:

(a) presenting similarly shaped non-rivalrous fusible stimuli of similar binocular luminance and

(b) presenting similarly shaped rivalrous fusible stimuli of different binocular luminance,

whereby, binocularly viewed stimuli form distinctive identifiable shapes that transform during perception and distinguish fusion from suppression.

3. (Original) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presented on printed material.

4. (Original) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presenting simultaneously or sequentially by a computer program for viewing on a monitor.

5. (Original) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presenting simultaneously or sequentially by a computer program for viewing on a projection screen.

6. (Original) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, presenting simultaneously or sequentially in a computer program for transmission over the Internet, and viewing on a monitor through lenses of said complementary colors.
7. (Original) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are viewed through a stereoscope.
8. (Amended) A device consisting of a pair of eyeglasses having a right lens and a left lens ~~pair of lenses~~ of complementary colors with means of attenuating the brightness of the light passing through one or both of said lenses ~~and of reversing the sides of said lenses while maintaining the same~~ to cause an interocular brightness difference.
9. (New) A device according to claim 1 having means of providing light brightness attenuation selectively to said right or left rival images.
10. (New) A device according to claim 1 having two adjustable eyepieces housing focusing lenses that move horizontally to accommodate subjects having different interpupillary distances.
11. (New) A device according to claim 1 where the device is hand-held and the images presented to the right and left eyes can be reversed as to the right and left sides by inverting said device causing said right rival image to be viewed by the left eye and said left rival image to be viewed by the right eye.
12. (New) A device according to claim 1 where the illumination of said rear chamber is flashing and the flashing is adjustable as to the duration of the flash and the interval between flashes.
13. (New) A process according to claim 2 where said non-rivalrous and rivalrous stimuli are encoded by polarization for viewing through polarizing glasses.

14. (New) A device according to claim 8 in which said eyeglasses are functional when the right and left sides are reversed so that said right lens is in front of the left eye and said left lens is in front of the right eye.